### Lesson 8 Practice Problems

1. Classify the graph of the equation $x^{2}+y^{2}−8x+4y=29$.
	1. circle
	2. exponential curve
	3. line
	4. parabola
2. Write an equation that states $\left(x,y\right)$ is the same distance from $\left(4,1\right)$ as it is from the $x$-axis.
3. Select **all** equations which describe the parabola with focus $\left(-1,-7\right)$ and directrix $y=3$.
	1. $\left(x−1\right)^{2}+\left(y−7\right)^{2}=\left(y+3\right)^{2}$
	2. $\left(x+1\right)^{2}+\left(y+7\right)^{2}=\left(y−3\right)^{2}$
	3. $y=-20\left(x+1\right)^{2}−2$
	4. $y=-20\left(x+1\right)^{2}+2$
	5. $y=-\frac{1}{20}\left(x+1\right)^{2}−2$
	6. $y=-\frac{1}{20}\left(x+1\right)^{2}+2$
4. Parabola A and parabola B both have the $x$-axis as the directrix. Parabola A has its focus at $\left(3,2\right)$ and parabola B has its focus at $\left(5,4\right)$. Select **all** true statements.
	1. Parabola A is wider than parabola B.
	2. Parabola B is wider than parabola A.
	3. The parabolas have the same line of symmetry.
	4. The line of symmetry of parabola A is to the right of that of parabola B.
	5. The line of symmetry of parabola B is to the right of that of parabola A.
* (From Unit 6, Lesson 7.)
1. A parabola has focus $\left(5,1\right)$ and directrix $y=-3$. Where is the parabola’s vertex?
* (From Unit 6, Lesson 7.)
1. Select the value needed in the box in order for the expression to be a perfect square trinomial**.**
* $x^{2}+7x+$
	1. 3.5
	2. 7
	3. 12.25
	4. 14.5
* (From Unit 6, Lesson 6.)
1. Rewrite each expression as the product of 2 factors.
	1. $x^{2}+3x$
	2. $x^{2}−6x−7$
	3. $x^{2}+4x+4$
* (From Unit 6, Lesson 5.)
1. Suppose this two-dimensional figure is rotated 360 degrees using the vertical axis shown. Each small square on the grid represents 1 square inch. What is the volume of the three-dimensional figure?
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* (From Unit 5, Lesson 15.)



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